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### REMARKS

Entry of this Amendment is believed proper since no new issues are being raised which would require the Examiner's further consideration and/or search.

Claims 1-32 are all the claims presently pending in this application. Claims 1, 4-5, 7, 10, 13, 16-17, 19, 22, 25, 27, 29 and 31 have been amended to more particularly define the claimed invention.

It is noted that the amendments are made only to more particularly define the invention and not for distinguishing the invention over the prior art, for narrowing the scope of the claims, or for any reason related to a statutory requirement for patentability. It is further noted that, notwithstanding any claim amendments made herein, Applicant's intent is to encompass equivalents of all claim elements, even if amended herein or later during prosecution.

Claims 25-26 and 31-32 stand rejected under 35 U.S.C. §102(b) as being anticipated by Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315.

Claims 1-7, 9-19 and 21-24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hiroyuki, JP 10-336120, further in view of Fee, U.S. Pat. No. 5,777,761 and Fukushima et al., U.S. Pat. Pub. No. 2005/0025481.

Claims 8 and 20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hiroyuki, JP 10-336120, Fee, U.S. Pat. No. 5,777,761 and Fukushima et al., U.S. Pat. Pub. No. 2005/0025481, further in view of Tammela et al., U.S. Pat. No. 6,868,234.

Claims 27-28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bortolini, U.S. Pat. No. 6,813,408, further in view of Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315.

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Claims 29-30 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315, further in view of Yamashita et al., U.S. Pat. No. 5,675,676.

These rejections are respectfully traversed in view of the following discussion.

## **I. THE PRIOR ART REJECTIONS**

### **A. The 35 U.S.C. § 102(b) Rejection over Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315**

The Examiner alleges that Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315, (Sugawara), teaches the invention of claims 25-26 and 31-32.

Applicant submits, however, that Sugawara does not teach or suggest, "a plurality of optical multiplexing and demultiplexing devices each corresponding to one of said plurality of optical signal communication service lines and each device including a bi-directional communicating input port and a bi-directional communicating output port....," of independent claim 25, and similarly independent claim 31.

The Examiner asserts that Sugawara clearly teaches that bi-directional communication is occurring. However, Applicant maintains that Sugawara discloses that bi-directional communication occurs between the collective DMUX and MUX units 1010-1016, wherein each DMUX and MUX unit only receives a unidirectional communication.

Applicant's claimed invention states that each device includes a bi-directional communication input port and a bi-directional communication output port. Sugawara merely discloses each device including a unidirectional input or output port.

Additionally, Sugawara fails to teach or suggest "*when a failure has occurred in one*

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*of said plurality of optical signal communication service lines, said one of said plurality of external optical signals is communicated to a bi-directional communicating input and a bi-directional communicating output port of an other of said specific optical multiplexing and demultiplexing devices.*"

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection since the alleged prior art reference to Sugawara fails to teach or suggest each element and feature of Applicant's claimed invention.

**B. The 35 U.S.C. § 103(a) Rejection over Hiroyuki, JP 10-336120 further in view of Fee, U.S. Pat. No. 5,777,761 and Fukashiro et al., U.S. Pat. Pub. No. 2005/0025481**

The Examiner alleges that Hiroyuki, JP 10-336120, (Hiroyuki), further in view of Fee, U.S. Pat. No. 5,777,761 and Fukashiro et al., U.S. Pat. Pub. No. 2005/0025481, (Fee and Fukashiro), makes obvious the invention of claims 1-7, 9-19 and 21-24.

The Examiner alleges that one of ordinary skill in the art would have been motivated to modify Hiroyuki with the teaching from Fee and Fukashiro to form the invention of claims 1-7, 9-19 and 21-24. Applicant submits, however that these references would not have been combined and even if combined, the combination would not teach or suggest each element of the claimed invention.

Indeed, Applicant submits, however, that neither Hiroyuki, nor Fee and Fukashiro, nor any alleged combination thereof, teaches or suggests, "*when a failure has occurred in said optical signal transmitting communication service line, said switching device switches so that said optical signal fed from said optical signal transmitting device is transmitted via one of said at least two bi-directional ports to said optical signal receiving communication service*

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line and, when a failure has occurred in said optical signal receiving communication service line, said switching device switches so that said optical signal to be fed to said optical signal receiving device is received via an other of said at least two bi-directional ports from said optical signal transmitting communication service line," of independent claim 1 and similarly independent claims 4, 7, 10, 13, 16, 19 and 22.

The Examiner admits that Hiroyuki fails to teach or suggest, "when there is a failure in the transmitting/receiving optical link, transmitting/receiving optical signal is switch [sic] to another bi-directional port." However, the Examiner alleges that the protection fibers 40-1 and 40-2 of Fukushima are equivalent to Applicant's optical signal transmitting communication service line and optical signal receiving communication service line.

The Examiner alleges and Fukushima clearly discloses working optical fibers 30-1 and 30-2, wherein these working optical fibers 30-1 and 30-2 do not receive transmissions from failed working optical fibers, but rather, transmissions from failed working optical fibers are re-routed on protection fibers distinct from the working optical fibers.

The Examiner alleges that Fee discloses an optical signal transceiver having at least one optical signal transmitting device and at least one optical signal receiving device to transmit and receive an optical signal to and from an opposite communication node.

Therefore, Fee and Fukushima fails to overcome the deficiencies of Hiroyuki.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection since the alleged prior art references to Hiroyuki and Fee and Fukushima (either alone or in combination) fail to teach or suggest each element and feature of Applicant's claimed invention.

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**C. The 35 U.S.C. § 103(a) Rejection over Hiroyuki, JP 10-336120, Fee, U.S. Pat. No. 5,777,761 and Fukushima et al., U.S. Pat. Pub. No. 2005/0025481 further in view of Tammela et al., U.S. Pat. No. 6,868,234**

The Examiner alleges that Hiroyuki, JP 10-336120, Fee, U.S. Pat. No. 5,777,761 and Fukushima et al., U.S. Pat. Pub. No. 2005/0025481, (Hiroyuki, Fee and Fukushima), further in view of Tammela et al., U.S. Pat. No. 6,868,234, (Tammela), makes obvious the invention of claim 8.

The Examiner alleges that one of ordinary skill in the art would have been motivated to modify Hiroyuki, Fee and Fukushima with the teaching from Tammela to form the invention of claims 8 and 20. Applicant submits, however that these references would not have been combined and even if combined, the combination would not teach or suggest each element of the claimed invention.

That is, Tammela fails to make up for the deficiencies of Hiroyuki, Fee and Fukushima as discussed above.

The Examiner states that Hiroyuki mollified by Fee and Fukushima fails to disclose wavelengths of optical signals transmitted by all communication nodes making up said ring-type network are different from one another.

The Examiner asserts Tammela discloses "a transmission ring network, wherein each node receiving and transmit [sic] a different wavelength compared to all other nodes in the right network."

However, even assuming *arguendo* that the Examiner's position has some merit, Tammela fails to teach or suggest, "when the failure has occurred in said one optical signal communication service line, said switching device switches so that said optical signal fed from said one adjacent communication node is received from said other optical signal

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communication service line via one of said at least two bi-directional ports and is transmitted to said optical signal receiving device and does switching, when the failure has occurred in said other optical signal communication service line, so that said optical signal to be transferred from said optical signal transmitting device to said other adjacent communication node is transmitted via an other of said at least two bi-directional ports to said one optical signal communication service line," of Applicant's independent claim 7 and similarly independent claim 19. Therefore, Tammela fails to overcome the deficiencies of Hiroyuki, Fee and Fukashiro.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection since the alleged prior art references to Hiroyuki, Fee and Fukashiro and Tammela (either alone or in combination) fail to teach or suggest each element and feature of Applicant's claimed invention.

**D. The 35 U.S.C. § 103(a) Rejection over Bortolini, U.S. Pat. No. 6,813,408 further in view of Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315**

The Examiner alleges that Bortolini, U.S. Pat. No. 6,813,408, (Bortolini), further in view of Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315, (Sugawara), makes obvious the invention of claims 27-28.

The Examiner alleges that one of ordinary skill in the art would have been motivated to modify Bortolini with the teaching from Sugawara to form the invention of claims 27-28. Applicant submits, however that these references would not have been combined and even if combined, the combination would not teach or suggest each element of the claimed invention.

Indeed, Applicant submits, however, that neither Bortolini, nor Sugawara, nor any

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alleged combination thereof, teaches or suggests, “

The Examiner admits that Bortolini fails to teach or suggest, *“an optical switch between said plurality of optical signal communication service lines and said plurality of second optical multiplexing and demultiplexing devices, said optical switch corresponding to each of said plurality of second optical multiplexing and demultiplexing devices, wherein said fourth set of input and output ports of said plurality of second optical multiplexing and demultiplexing devices corresponding to said optical switch that communicates to said first set of input and output ports of a specified one of said plurality of first optical multiplexing and demultiplexing devices when no failure has occurred in one of said plurality of optical signal communication service lines corresponding to said specified one of said plurality of first optical multiplexing and demultiplexing devices, and communicates from said fourth set of input and output ports of said plurality of second optical multiplexing and demultiplexing devices via one of said plurality of optical signal communication service lines to a first set of input and output ports of an other of said plurality of first optical multiplexing and demultiplexing devices when a failure has occurred in said one of said plurality of optical signal communication service lines.”*

However, the Examiner alleges that the optical switches 1051-105n are between optical communication lines 1003-1004 and 1007-1008 and MUX/DMUX 1010-1011 and 1014-1015 of Sugawara are equivalent to Applicant's above claim recitation.

Additionally, the Examiner states that, “switches 1051-105n performs switching of optical signal [sic] within protection fibers 1005-1008 when working fiber is broken.”

However, Sugawara fails to teach or suggest *communicating from said fourth set of input and output ports of said plurality of second optical multiplexing and demultiplexing*

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*devices via one of said plurality of optical signal communication service lines.* Sugawara clearly teaches against Applicant's claimed invention by disclosing signals transferred from a broken work in fiber are transferred to protection lines 1005-1008.

Therefore, Sugawara fails to overcome the deficiencies of Bortolini.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection since the alleged prior art references to Bortolini and Sugawara (either alone or in combination) fail to teach or suggest each element and feature of Applicant's claimed invention.

**E. The 35 U.S.C. § 103(a) Rejection over Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315 further in view of Yamashita et al., U.S. Pat. No. 5,675,676**

The Examiner alleges that Sugawara, et al., U.S. Pat. App. Pub. No. 2002/0044315, (Sugawara), further in view of Yamashita et al., U.S. Pat. No. 5,675,676, (Yamashita), makes obvious the invention of claims 29-30.

The Examiner alleges that one of ordinary skill in the art would have been motivated to modify Sugawara with the teaching from Yamashita to form the invention of claims 29-30. Applicant submits, however that these references would not have been combined and even if combined, the combination would not teach or suggest each element of the claimed invention.

Indeed, Applicant submits, however, that neither Sugawara, nor Yamashita, nor any alleged combination thereof, teaches or suggests, "when a failure has occurred in said one of said two optical signal communication service lines, said external optical signal is input to a first set of input and output ports of each of said two optical multiplexing and demultiplexing devices corresponding to an other one of said two optical signal communication service



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lines.”

However, the Examiner alleges that the optical switches 1051-105n are between optical communication lines 1003-1004 and 1007-1008 and MUX/DMUX 1010-1011 and 1014-1015 of Sugawara are equivalent to Applicant's above claim recitation.

Additionally, the Examiner states that, “switches 1051-105n performs switching of optical signal [sic] within protection fibers 1005-1008 when working fiber is broken.”

However, Sugawara fails to teach or suggest *when a failure has occurred in said one of said two optical signal communication service lines, said external optical signal is input to a first set of input and output ports of each of said two optical multiplexing and demultiplexing devices corresponding to an other one of said two optical signal communication service lines*. Sugawara clearly teaches against Applicant's claimed invention by disclosing signals transferred from a broken work in fiber are transferred to protection lines 1005-1008.

The Examiner admits that Sugawara fails to teach or suggest, “wherein said first set of input and output ports be connected to one another.” However, the Examiner alleges that the optical branching apparatus of Yamashita is equivalent to Applicant's first set of input and output ports being connected to one another.

The Examiner alleges that Yamashita discloses one of the outputs from multiplexing and demultiplexing unit is connected to one of the inputs of another multiplexing and demultiplexing unit.

However, Yamashita fails to teach or suggest, “*when a failure has occurred in said one of said two optical signal communication service lines, said external optical signal is input to a first set of input and output ports of each of said two optical multiplexing and*

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*demultiplexing devices corresponding to an other one of said two optical signal communication service lines.*

Therefore, Yamashita fails to overcome the deficiencies of Sugawara.

Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection since the alleged prior art references to Sugawara and Yamashita (either alone or in combination) fail to teach or suggest each element and feature of Applicant's claimed invention.

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## II. FORMAL MATTERS AND CONCLUSION

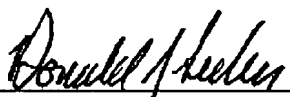
In view of the foregoing, Applicant submits that claims 1-32, all of the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date:

November 1, 2007

Donald J. Lecher, Esq.

Reg. No. 41,933

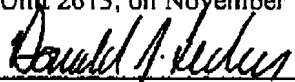
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### CERTIFICATE OF TRANSMISSION

I certify that I transmitted via facsimile to (571) 273-8300 the enclosed Amendment under 37 C.F.R. § 1.116 to Examiner Le, Art Unit 2613, on November 1, 2007.



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